U.S. Department of the Interior
Bureau of Land Management
White River Field Office
73544 Hwy 64
Meeker, CO 81641

ENVIRONMENTAL ASSESSMENT

NUMBER: CO-110-2005-206 EA

CASEFILE/PROJECT NUMBER (optional)**:**

- APD for well 6615B at location O28 1N99 - Lease C-60843
- Proposed additional well at location O28 1N99 - Lease C-60843
- Proposed two wells at location H33 1N99 - Lease C-60845
- Proposed two wells at location N02 199 - Lease C-62815
- Proposed two wells at location J23 199 - Lease C-60753
- Proposed two wells at location O01 299 - Lease C-64204
- Proposed two wells at location G24 299 - Lease C-64201

PROJECT NAME: Canary/Left Fork Exploration

LEGAL DESCRIPTION: T1S, R99W, Sec. 2, 11, 13-14, 23-24
T2S, R99W, Sec. 1, 12-13, 24
T1N, R99W, Sec. 28, 33

APPLICANT: EnCana Oil & Gas (USA) Inc.

DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES:

Proposed Action: This environmental assessment (EA) addresses currently proposed and planned facilities associated with the exploration of the oil and gas resources in the Canary and Left Fork Units by EnCana Oil and Gas (USA) Inc. (EnCana). See Figure 1. The project area includes the two units, comprising much of Townships 1 South and 2 South, Range 99 West and Township 1 North, Range 99 West in Rio Blanco County. Planned facilities include six well pads with approximate dimensions of 365' X 270', located on federal surface and federal mineral estate, each with two oil and gas wells; associated access roads (50' construction width, 30' long term width) and tie-in pipelines (50'construction width) (Figure 2).

The facilities are described below. On-site visits by EnCana, BLM and WestWater Engineering specialists were performed on October 20, 2004 and July 21, 2005. Total disturbance for the six well pads accessing federal minerals with associated access roads and pipelines would be an estimated 57 acres.

- Well Pad O28 1N99 – An APD for well 6615B O28 1N99 has been received for this well pad, located at T1N, R99W, SWSE Sec. 28, on Rio Blanco County Road 24X (CR 24X) in Trail Canyon. An APD for an additional well at this location will be submitted. The access road, approximately 200 feet long, would be constructed on the north side of the county road. The pipeline from the well pad would be constructed adjacent to the access.

- Well Pad H33 1N99 - Two wells are planned for this well pad, located at T1N, R99W, SENE Sec. 33, also on CR 24X in Trail Canyon.. An access road, approximately 1600 feet long, would be constructed on the south side of the county road along an existing two-track road. The proposed well pad would be located on the existing two-track and about 500 feet of new road would be constructed around the well pad to permit continued access to the south of the pad. The pipeline from the well pad would be constructed adjacent to the access road.

- Well Pad N02 199 - Two wells are planned for this well pad, located at T1S, R99W, SESW Sec. 2. An access road from CR 24X, approximately 3500 feet long, would be constructed on the north side of the drainage in which the well pad is located. A gathering line would be constructed adjacent to the access road and then south along CR 24X to a tie-in point just south of Big Duck Creek.

- Well Pad J23 199 - Two wells are planned for this well pad, located at T1S, R99W, NWSE Sec. 23. An access road from CR 24X, approximately 5800 feet long would be constructed. The final 1500 feet would be new construction across drainage; the initial 4300 feet would be an upgrade of an existing two-track. A gathering line would be constructed adjacent to the access road and then north along CR 24X to a tie-in point at an existing well, #6602.

- Well Pad O01 299 - Two wells are planned for this well pad, located at T2S, R99W, SWSE Sec. 1. No access road would be required because it is located immediately adjacent to CR 91. Produced gas would be carried by an existing line located in the county road.

- Well Pad G24 299 - Two wells are planned for this well pad, located at T2S, R99W, SENE Sec. 24. An access road approximately 600 feet long from CR 68 would be constructed. A pipeline would be constructed adjacent to the access road and tie-in to an existing line located in the county road.

With the exception of new road construction described above, all access would be on existing Rio Blanco County roads. No changes or improvements of those roads are anticipated as part of this project. Natural gas produced from most of the planned wells would be transported from the units in existing natural gas pipelines. The exception is a pipeline to transport gas from the H33 1N99 and O28 1N99 locations. A pipeline that would parallel CR 24X up Trail Canyon is planned but has not been laid out and completely surveyed.

Total initial disturbance for all well pad locations, associated access roads and pipelines is estimated at 57 acres ; 21 acres for well pads, and 36 acres for access roads and tie-in pipelines.

After successful reclamation of the disturbed areas, long-term disturbance is estimated at about 14 acres.

No Action Alternative: None of the proposed wells, well pads, access roads, or pipelines would be constructed.

NEED FOR THE ACTION: All of the proposed or potential actions analyzed in this EA are being pursued by EnCana in order to exercise its federal mineral lease rights.

PLAN CONFORMANCE REVIEW: The Proposed Action is subject to and has been reviewed for conformance with the following plan (43 CFR 1610.5, BLM 1617.3):

Name of Plan: White River Record of Decision and Approved Resource Management Plan (ROD/RMP).

Date Approved: July 1, 1997

Decision Number/Page: Page 2-5: "Make federal oil and gas resources available for leasing and development in a manner that provides reasonable protection for other resource values."

Decision Language: The proposed action has been reviewed for conformance with this plan (43 CFR 1610.5, BLM 1617.3). The action conforms to the decisions/pages of the plan listed above.

AFFECTED ENVIRONMENT / ENVIRONMENTAL CONSEQUENCES / MITIGATION MEASURES:

STANDARDS FOR PUBLIC LAND HEALTH: In January 1997, Colorado Bureau of Land Management (BLM) approved the Standards for Public Land Health. These standards cover upland soils, riparian systems, plant and animal communities, threatened and endangered species, and water quality. Standards describe conditions needed to sustain public land health and relate to all uses of the public lands. Because a standard exists for these five categories, a finding must be made for each of them in an environmental analysis. These findings are located in specific elements listed below.

CRITICAL ELEMENTS

AIR QUALITY

Affected Environment: The project area is within a Class II Prevention of Significant Deterioration (PSD) air quality area. The nearest Class I PSD area, the Flat Tops Wilderness Area, is more than 40 miles from the project area.

The principal air quality parameter likely to be affected by construction of well pads, roads, and pipelines is the inhalable particulate level (PM_{10} - particles ten microns or less in diameter) associated with fugitive dust. Although no monitoring data are available for the survey area, it can be surmised that the air quality is good because the Colorado Air Pollution Control Division (APCD) estimates the maximum PM_{10} levels (24-hour average) in rural portions of western Colorado like the Piceance Basin to be less than 50 micrograms per cubic meter. This estimate is well below the National Ambient Air Quality Standard (NAAQS) for PM_{10} (24-hour average) of 150 $\mu g/m^3$.

Environmental Consequences of the Proposed Action: The construction of the facilities proposed for the project area – well pads, tie-in pipelines, and access roads - would result in short-term, local impacts on air quality during and after construction, due to dust being blown into the air. However, airborne particulate matter would not exceed Colorado air quality standards on an hourly or daily basis. Following successful revegetation of the sites, airborne particulate matter should return to near pre-construction levels.

Environmental Consequences of the No Action Alternative: None.

Mitigation: The proponent is responsible for abatement of dust created by construction or by project-related traffic. Potential dust abatement tools could include, among others, periodic watering as described in EnCana's 13 Point Surface Use Plan (2.K), other methods of treating road surfaces, and restriction of vehicle speed to levels that would minimize dust.

Permitting of all regulated air pollution sources through the Colorado Department of Public Health and Environment (CDPHE), Air Pollution Control Division, will assure compliance with all federal and state standards. The proponent will provide evidence to BLM that necessary permits have been acquired.

CULTURAL RESOURCES

Affected Environment: Well Pads J23 199, O01 299, G24 299: The proposed well pads were inventoried at the Class III (100% pedestrian) level on November 3 and 5, 2004 (Conner and Davenport, 2004; Compliance Dated, May 27, 2004). Access roads and tie-in lines for the O01 299 and G24 299 locations were included within the 40 acres inventoried for the well pads at these sites. No eligible cultural resources at these three locations were identified in the inventory. Parts of the J23 199 well pad area and the access road to that site had previously been inventoried with no cultural resources located in the vicinity of the proposed action.

Well Pad N02 199 and access roads and tie-in pipelines for N02 199 and J23 199: The well pad and proposed routes of the access roads and tie-in pipelines were inventoried at the Class III (100% pedestrian) level on April 14, 2005 (Conner and Davenport, 2004; Compliance Dated, 05/26/2005). Three archaeological sites were located in the inventory area.

Well Pads O28 1N99 and H33 1N99 with associated access roads and pipelines: The proposed well pads were inventoried at the Class III (100% pedestrian) level on July 21, 2005 (Conner and Davenport, 2005; Compliance Dated, 7/26/2005). No eligible cultural resources at these locations were identified in the inventory.

Environmental Consequences of the Proposed Action: Construction of the proposed well pads and their associated access roads and tie-in pipelines would not impact any known eligible cultural resources.

Environmental Consequences of the No Action Alternative: None

Mitigation: 1. The operator is responsible for informing all persons who are associated with the project operations that they will be subject to prosecution for knowingly disturbing historic or archaeological sites, or for collecting artifacts. If historic or archaeological materials are uncovered during any project or construction activities, the operator is to immediately stop activities in the immediate area of the find that might further disturb such materials, and immediately contact the authorized officer (AO). Within five working days, the AO will inform the operator as to:

- whether the materials appear eligible for the National Register of Historic Places,
- the mitigation measures the operator will likely have to undertake before the site can be used (assuming in situ preservation is not necessary),
- a timeframe for the AO to complete an expedited review under 36 CFR 800-11 to confirm, through the State Historic Preservation Officer, that the findings of the AO are correct and that mitigation is appropriate.

If the operator wishes, at any time, to relocate activities to avoid the expense of mitigation and/or the delays associated with this process, the AO will assume responsibility for whatever recordation and stabilization of the exposed materials may be required. Otherwise, the operator will be responsible for mitigation cost. The AO will provide technical and procedural guidelines for the conduct of mitigation. Upon verification from the AO that the required mitigation has been completed, the operator will then be allowed to resume construction.

2. Pursuant to 43 CFR 10.4(g) the holder of this authorization must notify the AO, by telephone, with written confirmation, immediately upon the discovery of human remains, funerary items, sacred objects, or objects of cultural patrimony. Further, pursuant to 43 CFR 10.4 (c) and (d), the holder must stop activities in the vicinity of the discovery and protect it for 30 days or until notified to proceed by the AO.

3. N02 199 well pad: All three sites located in the inventory area must be avoided by all construction and maintenance activities.

INVASIVE, NON-NATIVE SPECIES

Affected Environment: Well pads N02 199, J23 199, O01 299, and G24 299 and their proposed access roads and pipelines were inventoried for the presence of any noxious or invasive weeds on November 9 and 10, 2004. No snow cover existed within the inventoried areas at the time of the survey. Approximately 40 acres around each proposed well pad were inventoried with a minimum radius of 700 feet around the well stake. The proposed access roads and associated pipelines outside the areas inventoried for the well pads were inventoried 50 feet on either side the flagged proposed access route.

No noxious weed species were found on any of the well pads or their proposed access routes. Although these areas were inventoried well after the end of the growing season, the presence of any noxious weeds could still have been identified from any skeletons of mature plants that would have been present. In addition, several of the noxious weed species known to occur within the Piceance Basin are biennial species which can be identified from the 1st year's vegetative growth which likely would still be alive and photosynthesizing at the time the inventory was conducted.

The only invasive species, cheat grass, was noted in small occurrences along existing roads in the general area of each planned well pad. The only location with considerable amounts of cheat grass present was well pad O01 299 (SWSE, Sec. 1, T2S R99W). As much as 20% of the vegetative ground cover at this location is cheat grass.

Well pads O28 1N99 and H33 1N99 and their proposed access roads were inventoried for noxious or invasive weeds on July 21, 2005. Approximately 25 acres at each proposed well pad were inventoried in an area within 600 feet of the well center stake. The proposed access road and associated pipeline outside the area inventoried for the well pads was inventoried 50 feet on either side the flagged route. No noxious weed species were found on the well pads or their proposed access routes. The only invasive species, cheat grass, was noted in small occurrences along existing roads in the general area of each proposed well pad location. Some small portion of well pad O28 1N99 had cheatgrass, making up to 15 % of the vegetation ground cover.

Environmental Consequences of the Proposed Action: This general area of the Piceance Basin has infestations of houndstongue, musk thistle, yellow toadflax, leafy spurge, black henbane and spotted knapweed, all of which are being treated by BLM, local ranchers and others. The disturbance associated with the proposed action could create a noxious weed problem by importing weed seed on vehicles and equipment or by having suitable conditions present (non-vegetated disturbed areas) for introduction of noxious weeds by other vectors. In addition to noxious weeds, invasive non-native species such as cheat grass could also establish on these areas. Establishment of noxious or invasive weeds would create problems through seed production in proportion to the number of plants and the duration they are reproducing. Increased seed production of noxious or invasive plants could aggressively compete with or exclude desired vegetation during reclamation. The noxious or invasive species seed production

could also encourage the spread of these unwanted plants into the adjacent native plant communities.

Environmental Consequences of the No Action Alternative: None

Mitigation: Eliminate any noxious plants before any seed production has occurred. Eradication should make use of materials and methods approved in advance by the Authorized Officer.

The operator will clean all off-road equipment to remove seed and soil prior to commencing operations on public lands within the project area.

Other mitigation is included in the Vegetation section.

MIGRATORY BIRDS

Affected Environment: The sagebrush, mountain shrub and pinyon/juniper communities found within the project area support a large array of migratory birds that nest during the months of May, June and July. Bird populations associated with these communities that have a high conservation interest (Rocky Mountain Bird Observatory, Partners in Flight program) are listed in the table below. There are two distinct sagebrush communities in the project area. In the drainage bottoms, basin big sagebrush dominates and often contains a greasewood component. These sagebrush stands are often dense and exceed six feet in height. On the ridge tops and sagebrush flats, Wyoming big sagebrush dominates with pinyon and juniper often encroaching on the edges. There are no specialized or narrowly endemic species known to occupy the project area.

Birds of High Conservation Priority by Habitat Association

Sagebrush	Pinyon/Juniper	Mountain Shrub
Brewer's sparrow Green-tailed towhee	Pinyon jay Black-throated gray warbler Juniper titmouse Gray flycatcher Violet-green swallow	Green-tailed towhee Virginia's warbler Blue grouse Common poorwill

The proposed well sites and their associated access roads and pipelines would occur in all three habitat associations.

Although these upland sites have no open water or wetland areas that support or attract waterfowl use, the development of reserve pits that contain drilling fluids have attracted waterfowl use, at least during the migratory period (i.e., local records: mid-March through late May; mid-October through late November).

Environmental Consequences of the Proposed Action: Construction of six well pads in big sagebrush types would remove approximately 18 acres of habitat while one well pad (G24 299) located in pinyon/juniper would remove 3 acres of habitat. Access roads and associated

pipelines would pass through both sagebrush and pinyon/juniper habitat. Two well sites are adjacent to existing roads and would require no habitat clearing for pipeline construction (O01 299 and O28 1N99). Access road and pipeline construction at the remaining four well locations would either be new construction or upgrading of existing two-track roads. These roads and pipelines would remove approximately 36 acres of pinyon/juniper, mountain shrub and big sagebrush habitat. Construction during the migratory bird nesting season (May through July period) would be disruptive and nests could be lost. Recent studies suggest that nesting density tends to be reduced (i.e., 50%) in close proximity (i.e., within 300') of roads. Typically, one pair of high interest bird species occurs per hectare. Although the proposed actions would represent an incremental and longer term reduction in big sagebrush, mountain shrub and pinyon/juniper habitat, implementation of the proposed actions would have no measurable influence on the abundance or distribution of breeding migratory birds at any landscape scale.

It has recently been brought to BLM's attention that in certain situations migratory waterfowl have contacted drilling or frac fluids (i.e., stored in reserve pits) during or after completion operations and are suffering mortality in violation of the Migratory Bird Treaty Act. The extent and nature of the problem is not well defined, but is being actively investigated by the federal agencies and the companies. Until the vectors of mortality are better understood, management measures must be conservative and relegated to preventing bird contact with frac and drilling fluids that may pose a problem.

Environmental Consequences of the No Action Alternative: None

Mitigation: The operator shall prevent use by migratory birds of reserve pits that store or are expected to store fluids which may pose a risk to such birds (e.g., migratory waterfowl, shorebirds, wading birds and raptors) during completion and after completion activities have ceased. Methods may include netting, the use of bird-balls, or other alternative methods that effectively prevent use and that meet BLM approval. It will be the responsibility of the operator to notify the BLM of the method that will be used to prevent use two weeks prior to when completion activities are expected to begin. The BLM approved method will be applied within 24 hours after completion activities have begun. All lethal and non-lethal events that involve migratory birds will be reported to the Petroleum Engineer Technician immediately.

THREATENED, ENDANGERED, AND SENSITIVE ANIMAL SPECIES (includes a finding on Standard 4)

Affected Environment: The area of the proposed action includes no federally-listed animal species and no habitat for such species. The special status species of concern in the project area include two Colorado BLM Sensitive Species, greater sage grouse and northern goshawk.

The potential for goshawks is low in the project area as the preferred habitat in the Piceance drainage is spruce/fir or spruce/fir mixed with aspen. Rarely have goshawks been known to nest in mature pinyon/juniper woodlands, although this habitat is quite abundant in the project area and on or adjacent to several proposed well locations. The contribution of pinyon/juniper

woodlands to the distribution, abundance and population viability of the goshawk is thought to be of small consequence. As discussed in the Terrestrial Wildlife Section, mature pinyon/juniper woodlands surrounding the access roads and well locations covered in this analysis were surveyed for raptor nesting during the spring and summer months of 2005. No evidence of goshawk nesting or presence was found.

The project area is a series of low ridges sloping to the northeast away from Cathedral Bluffs and Calamity Ridge. The ridges are a mix of sagebrush flats and stands of pinyon/juniper, while the draws are tall basin big sagebrush with pinyon/juniper on the slopes and in the heads of side draws. The overall range for the greater sage grouse, as currently mapped, skirts the project area, although more precise mapping could include the open sagebrush habitat adjacent to well site G24 299 on the ridge between Stake Springs Draw and Ryan Gulch. Historically, many of the ridge tops may have been occupied by sage grouse in this area, including Wolf Ridge west of Stake Springs Draw (McVean, personal communication with Barry Dupire) and Calamity Ridge on the northwest corner of the project area. The 84-Mesa sage grouse lek (158) occurs within the project area, but no activity has been noted at this site for a good number of years. The encroachment of pinyon/juniper, along with reduced numbers of active sage grouse leks and shrinkage of distribution and occupied habitat to the upper portions of the Cathedral Bluffs has resulted in this area falling outside the current overall range.

Well site G24 299 is situated on the distal margin of a Wyoming big sagebrush park that may have offered historic potential as sage-grouse habitat. Presuming sagebrush habitats that abut mature pinyon-juniper woodlands (e.g., within 300') have marginal utility in the support of sage-grouse, there is virtually no likelihood that the proposed action would have any direct or indirect influence on the future extent or continuity of habitat potentially suited for sage-grouse reoccupation. Historic and active leks along with telemetry studies in the late 1990's indicate sage grouse activity is four to five miles to the southwest. The other well and pipeline locations occur in basin big sagebrush habitat or are far removed from the current overall range. On April 14, 2005 the sagebrush flat adjacent to well pad G24 299 and an area one mile further to the south were searched for evidence of sage grouse use. No sage grouse sign was noted.

Environmental Consequences of the Proposed Action: The proposed actions occur outside the overall range for sage grouse and will not impact any currently occupied habitat. All mature pinyon/juniper woodland habitat suitable for raptor nesting adjacent to proposed access and well locations was surveyed in 2005. The absence of goshawk nests or activity indicates that goshawk would not be affected by the proposed action.

Environmental Consequences of the No Action Alternative: None.

Mitigation: See Terrestrial Wildlife Section for the requirement that re-surveys for raptor nesting will be required at well sites G24 299 and J23 199 should development occur after 2005 during the nesting season.

Finding on the Public Land Health Standard for Threatened & Endangered species: Although goshawks are peripheral breeding species in pinyon/juniper woodlands in the Piceance Basin, the project area currently meets the standard for this special status species. All suitable

nesting habitat potentially impacted by the project has been surveyed to assure nesting will not be disrupted. The standard with regard to the goshawk will be met. The requirement that re-surveys for raptor nesting will be required at well sites G24 299 and J23 199 is designed to maintain habitat utility there in the event goshawks happen to nest in adjacent stands of mature woodland. This measure will ensure that the proposed action would continue to remain consistent with the standards for Threatened & Endangered species.

THREATENED, ENDANGERED, AND SENSITIVE PLANT SPECIES (includes a finding on Standard 4)

Affected Environment: It is likely that three special status species (SSS) plants could occur in this portion of the Piceance Basin. Two species are Federal threatened species, the Dudley Bluffs bladderpod (*Lesquerella congesta*) and the Piceance twinpod (*Physaria obcordata)*. These two species have a very specific affinity to relatively barren shale outcrops of the Thirteen Mile Creek Tongue of the Green River Formation. This formation is fairly easy to distinguish from the darker and coarser textured Uinta Formation which lies above and beneath the Thirteen Mile Creek Tongue. Outcrops of this formation occur near the project area in Duck Creek and in Ryan Gulch.

The third SSS plant is the Piceance bladderpod *(Lesquerella parviflora)* which is a BLM sensitive species. This plant is also restricted to barren shale exposures of the Green River Formation. Known occurrences of this species occur on barren shale exposures of the Parachute Creek Member of the Green River Formation. Exposures of this formation, as well as known occurrences of the Piceance bladderpod, occur at elevations considerably higher than those at the proposed well pads. The nearest outcropping of this formation occurs on Calamity Ridge and along the Cathedral Bluffs. This formation is also a light gray color easily distinguished from other formations in the area.

Well pads N02 199, J23 199, O01 299, and G24 299 and their proposed access roads and pipelines were inventoried for the presence of any SSS plants on November 9 and 10, 2004. In addition to surveying for individuals of SSS plant species, the areas were surveyed for any potentially suitable habitat. No snow cover existed within the inventoried areas at the time of the survey. Approximately 40 acres around each proposed well pad were inventoried with a minimum radius of 700 feet around the well center stake. The proposed access roads and associated pipelines outside the areas inventoried for the well pads were inventoried 50 feet on either side the flagged proposed access route.

The late fall season during which the survey was conducted for these four well pads is outside the generally recognized period for a survey (late spring through summer) to be confident that the SSS plant species being sought would be identified if present. During the late fall, it is possible that above ground portions of these species would no longer be present. However, as with most native thick-leaved mustards in this region, at least the basal rosette leaves remain functional through most of the year. The three SSS plants of concern fall into this category.

Nearby populations of the two threatened plants were visited on November 9, 2005 to evaluate plant condition. One population of the Piceance Twinpod and one population of the Dudley

Bluffs Bladderpod were visited. Both plants were present within their respective locations and could be identified from vegetative characters of leaves and/or growth forms present at this time of year. Therefore, it is likely that plants could be reliably identified on the project site if present.

No SSS plant species were identified within the areas surveyed for these four proposed well pads. No potential habitat for these species (Green River Formation outcroppings) was found within or near the surveyed areas. All four locations occur on soils derived from the Uinta Formation, which is not suitable habitat for any SSS plants within the Piceance Basin.

A prior SSS plant survey covered an area that would be impacted by one of the proposed well pads. A July 2004 block survey for Shell Frontier Oil and Gas covered a larger area which encompassed the O01 299 well pad. This survey did not find any SSS plants or their potential habitat in or near the areas that would be impacted by the well pad.

Well pads O28 1N99 and H33 1N99 and their proposed access roads were inventoried for special status species (SSS) of plants and their habitat on July 21, 2005. Approximately 25 acres at each proposed well pad were inventoried within an area 600 feet from the well center stake. The proposed access road and associated pipeline outside the areas inventoried for the well pads was inventoried 50 feet on either side the flagged route

No SSS plant species were identified within the areas surveyed for the two well pads. A band of exposed Green River shale occurs on the mid to lower slope on the northeast side of Trail Canyon. Well pad O28 1N99 would cut into this shale exposure on the northwest corner of the pad. The outcrop was thoroughly inspected for the presence of any SSS plants but none were found. This outcrop is also devoid of many of the more common plants usually associated with the SSS plants on their habitat. This particular outcropping does not appear to be suitable for any SSS plants. At best, it would be very marginal habitat for introduction of any SSS plant.

Environmental Consequences of the Proposed Action: Based upon the lack of any potential habitat at or near the six proposed locations and the absence of any individuals found during surveys of the six locations, it can be safely assumed that no SSS plants occur at the six locations. No impacts to any SSS plant is expected from the actions proposed.

Environmental Consequences of the No Action Alternative: None

Mitigation: None required.

Finding on the Public Land Health Standard for Threatened & Endangered species (partial): The standard with regard to the three sensitive, threatened or endangered plant species potentially located in the project area does not apply since no individual plants and no suitable habitat for the plants was identified during the SSS inventory.

WASTES, HAZARDOUS OR SOLID

Affected Environment: There are no known hazardous or other solid wastes on the subject lands. No hazardous materials are known to have been used, stored or disposed of at sites included in the project area.

Environmental Consequences of the Proposed Action: No listed or extremely hazardous materials in excess of threshold quantities are proposed for use in this project. While commercial preparations of fuels and lubricants proposed for use may contain some hazardous constituents, they would be stored, used and transported in a manner consistent with applicable laws, and the generation of hazardous wastes would not be anticipated. Solid wastes would be properly disposed of.

Environmental Consequences of the No Action Alternative: No hazardous or other solid wastes would be generated under the no-action alternative.

Mitigation: The operator shall be required to collect and properly dispose of any solid wastes generated by the proposed actions.

WATER QUALITY, SURFACE AND GROUND (includes a finding on Standard 5)

Affected Environment: Surface Water: The proposed G24 299, J23, 199, N02 199, O01 299, H33 1N99 and O28 1N99 well pads, pipelines and access roads lie within areas that are tributary to Little Duck Creek, Stake Springs Draw, and other tributaries of Yellow Creek. Yellow Creek is a tributary of the White River which ultimately flows into the Colorado River. Water quality standards and guidance for drainages within the Lower Colorado River Basin are included in CDPHE-WQCC Regulation No. 37 (2004a).

Yellow Creek is listed as the mainstem of Yellow Creek, including all tributaries, from the source to the confluence with the White River – Segment 13b of the White River. It has use designations of aquatic life warm 2, recreation 2, and agriculture. Yellow Creek has temporary modifications for all numeric standards equal to the current conditions with a modification expiration date of February 2009. White River Segment 13b has a use-protected designation of no change in numeric standards, based on their present classification. Existing standards are recommended because this segment has only a minimal number of standards (CDPHE, 2004a).

The "Status of Water Quality in Colorado – 2004" (CDPHE, 2004b) was reviewed for information related to the project area drainage. White River Segment 13b (Yellow Creek) was noted to have fully-supporting aquatic life warm 2, fully-supporting recreation 2, and fully-supporting agriculture designated uses. White River Segment 13b has a Colorado-integrated reporting category of 1 which is described as: "Fully supporting for all uses. All uses have been assessed and all uses are fully supporting the designated uses"

Colorado Regulations Nos. 93 and 94 (CDPHE, 2004c and 2004d, respectively) were reviewed for information related to the project area drainages. Regulation No. 93 is the State's list of water-quality-limited segments requiring Total Maximum Daily Loads (TMDLs). The 2004 list of segments needing development of TMDLs includes one segment within the White River -

segment 9b, White River tributaries North & South Forks to Piceance Creek, specifically the Flag Creek portion (for impairment from selenium with a low priority for TMDL development). Regulation 94 is the State's list of water bodies identified for monitoring and evaluation, to assess water quality and determine if a need for TMDLs exists. The list includes five White River segments that are potentially impaired – 9, 12, 13a, 21, and 22. Segment 13b, Yellow Creek, was not listed.

Ground Water: The project area is located within the Piceance Creek structural basin. Snowmelt and rain recharge the bedrock aquifers and replenish the ground water that migrates through the Uinta and Green River Formations (Tobin, 1987). Piceance Creek drainage basins upper and lower aquifers are separated by the semi-confining Mahogany Zone. Information presented in Topper et al. (2003) indicates the following approximate depths to potentiometric surfaces within hydrogeologic units: upper Piceance basin aquifer 600 feet, lower Piceance basin aquifer 700 feet, and Mesaverde aquifer 400 feet (based on a surface elevation of 7,400 feet). Water well data from the Colorado Division of Water Resources (Topper et al., 2003) indicated that in central Rio Blanco County, water wells are not common in the basin. In the project area, the total concentration of dissolved constituents in the upper and lower aquifers is generally lower than 1000 milligrams per liter. Primary hydrogeologic units within the Piceance Basin are listed in the following table.

Summary of Hydrogeologic Units

Hydrogeologic Unit	Thickness (ft)	Approx Avg Depth (ft)	Conductivity (ft/day)	Yield (gpm)	Transmissivity (ft^2/day)
Upper Piceance Basin aquifer	0 – 1,400	700	<0.2 to >1.6	1 to 900	610 to 770
Lower Piceance Basin aquifer	0 – 1,870	2,800	<0.1 to >1.2	1 to 1,000	260 to 380
Mesaverde aquifer	Averages 3,000	7,700	NL	NL	NL
Abbreviations: ft – feet, approx – approximate, avg – average, gpm – gallons per minute, and NL – not listed.					

Table information from Topper et al. (2003).

Environmental Consequences of the Proposed Action: Surface Water: The primary potential water quality impact would be from additional sediment resulting from the proposed access roads, well pad, and pipeline construction. Removal of vegetative cover results in the potential for increased soil erosion near newly disturbed areas. Runoff-producing storm events could increase sediment loads in ephemeral channels. Depending on the soils affected, salt content in the sediment may also degrade water quality.

The magnitude of these impacts is dependent on the amount of surface disturbance and climatic conditions during the time the soils are exposed to the elements. Impacts would continue until mitigation has been implemented and proven to be successful. Such mitigation would include revegetating the unused portion of the well pads as soon as possible, placing gravel on areas that would not be revegetated, or placing check dams to control runoff.

Ground Water: Impact on groundwater resources is not anticipated. Shallow aquifers are protected from hydrofracturing and the production of oil and gas by installation and cementing of surface and intermediate casing. The objective of surface and intermediate casing is specifically to isolate shallow aquifers. Hydrofracturing used to stimulate natural gas production of the Mesaverde Formation is anticipated to extend a maximum of 500 feet horizontally from each

well bore and not at all vertically. Any groundwater produced from the Mesaverde Formation will be hauled off and disposed of due to poor water quality and therefore preventing adverse impacts to surface water.

Environmental Consequences of the No Action Alternative: None.

Mitigation: Oil and gas development activities require a stormwater discharge permit from the Colorado Department of Public Health and Environment, Water Quality Control Division, for construction associated with well pads, pipelines, roads and other facilities. As a condition of the permit, a Stormwater Management Plan (SWMP) would be developed showing how Best Management Practices (BMPs) are to be used to control runoff and sediment transport. The applicant is required to have a copy of the SWMP on file with the Meeker Field Office and to implement the BMPs in that plan as on-site conditions warrant.

The White River Record of Decision and Approved Resource Management Plan (July, 1997) includes a list of standard Conditions of Approval to be applied to All Surface Disturbing Activities (COAs 1-12) and to Road Construction and Maintenance (COAs 13-62). The applicant is required to be familiar with those standard COAs and to implement them as on-site conditions warrant.

Finding on the Public Land Health Standard for water quality: Water quality in the stream segments within the project area meets the criteria established in the standard. With successful reclamation, the proposed and potential actions in the project area would not change this status.

CRITICAL ELEMENTS NOT PRESENT OR NOT AFFECTED:

No flood plains, riparian or wetland systems, prime and unique farmlands, wild and scenic rivers, Areas of Critical Environmental Concern or wilderness exist within the project area. The Public Land Health Standards for wetland or riparian systems are not applicable to this action, since neither the proposed action nor the no-action alternative would have any influence on these. There are also no Native American religious or environmental justice concerns associated with the proposed action.

NON-CRITICAL ELEMENTS

The following elements **must** be addressed due to the involvement of Standards for Public Land Health:

SOILS (includes a finding on Standard 1)

Affected Environment: The soil types in the project area occur from 6,000 to 8,900 feet in elevation. The average annual precipitation in the project area is 14 to 22 inches, the average annual temperature is 37 to 45 degrees F, and the average frost-free period is approximately 80

to 105 days. The proposed road well pads and associated roads and pipelines would occur within eight soil units mapped by the Soil Conservation Service (SCS, 2004). Soil units, names, and characteristics are listed in the following table.

Summary of Project Area Soil Units

Soil Map Unit	Soil Unit Name	Slope (%)	Ecological Site	Effective Rooting Depth (in)	Runoff	Erosion Potential	Bedrock Depth (in)
6	Barcus channery loam	2–8	Foothills Swale	≥ 60	Slow	Moderate	> 60
36	Glendive fine sandy loam	2–4	Foothills Swale	≥ 60	Slow	Slight	> 60
64	Piceance fine sandy loam	5–15	Rolling Loam	20-40	Slow to medium	Moderate-high	20-40
70	Redcreek-Rentsac complex	5–30	P/J Woodlands	10-20	Medium	Moderate to high	10-20
73	Rentsac Channery loam	5–50	P/J Woodlands	10-20	Rapid	Moderate-very high	10-20
75	Rentsac-Piceance complex	2–30	P/J Woodlands – Rolling Loam	10-20	Medium	Moderate-high	10-40
91	Torriorthents-Rock outcrop complex	15-90	Stony Foothills	10-20	Very rapid	Very high	N/A
104	Yamac loam	2-15	Rolling Loam	> 60	Medium	Slight-Moderate	N/A

The majority of soil units have listed salinity values of less than 2 Mmhos per centimeter. Redcreek-Rentsac complex and Rentsac Channery loam have listed salinity values of less than 4 and Glendive fine sandy loam has a maximum listed salinity value of 8 Mmhos per centimeter. No salinity value is listed for the Torriorthents-Rock outcrop complex. Two of the 8 soil units indicate the potential for a fragile soil with listed slope ranges that exceed 35 percent, the criteria that would trigger implementation of a Controlled Surface Use stipulation.

Environmental Consequences of the Proposed Action: Well pad, road and pipeline construction would remove surface cover and disturb soils, potentially increasing soil erosion and reducing soil health and productivity. Actions considered in this analysis and their potential to produce soil disturbance are as follows:

- Construction of the well pads would require an estimated 20.8 acres for drilling surface, reserve pit, cut and fill slopes. Assuming the wells are productive, interim reclamation would take place on all but six acres which would remain in a non-vegetated state for the life of the wells.
- Access roads are generally short distances with the exception of the roads to the J23 199 and N02 199 well pads. An assumed road width of 30 feet would remain unvegetated for the long term.
- Pipelines generally are assumed to be immediately adjacent to the access roads. The pipelines from the J23 199 and N02 199 well pads would continue on for some length adjacent to CR 24X. After construction of the pipelines, 100 % of the disturbed area would be reclaimed. With successful reclamation, the long-term disturbance would be minimal.

- All the access into the units and to the proposed actions is on existing roads. The roads are in generally good condition and no new soil disturbance for improvement of these roads is anticipated. Normal maintenance activities would occur.

The amount of soil disturbance by soil mapping unit is described in the following table. All but about 2 ½ acres, a section of the N02 199 pipeline that crosses the Little Duck Creek drainage, would occur on BLM.

Initial Soil Disturbance from Proposed Actions (acres) *

Soil Mapping Unit								Total Area
6	**36**	**64**	**70**	**73**	**75**	**91**	**104**	
Well Pads								
	4.8		1.5	3.3	6.5	2.0	2.8	20.8
Access Roads								
	2.0		1.7	1.6	6.9		0.4	12.5
Pipelines								
0.3	3.5	2.6	1.7	3.8	11.1		0.4	23.4
Total Area								
0.3	10.3	2.6	4.9	8.6	24.5	2.0	3.5	56.7

* Numbers may not add due to rounding.

The total area of disturbance over all soil units would be approximately 57 acres, 40 percent of which is for the pipelines. After successful reclamation, an estimated 14 acres (access roads and one-acre for each well pad) would remain in an unvegetated state for the life of the project (30-40 years) or longer.

The majority (61 percent) of soil disturbance occurs within the following two soil units:

- 10.31 acres in Glendive fine sandy loam – 2 to 4 percent slopes, slow runoff, and slight erosion potential.
- 24.26 acres in Rentsac-Piceance complex – 2 to 30 percent slopes, medium runoff, and moderate to high erosion potential.

The indicated soil characteristics indicate the need for implementation of erosion control practices, Best Management Practices, and revegetation. This is most important for disturbance within the Torriorthents-Rock outcrop complex and Rentsac Channery loam soil units where erosion potential is greatest and the steepest slopes are likely to be encountered.

Environmental Consequences of the No Action Alternative: None.

Mitigation: See recommended mitigation for Water Quality regarding a Stormwater Management Plan and standard COAs.

Segregation of topsoil material and replacement of top soil in its respective original position (last out, first in) would assist in the reestablishment of soil health and productivity. Topsoil stockpiled for short time periods as is the case with road and pipeline construction will be wetted to limit dust production. Stockpiled soils left for extended time periods of time (e.g. stockpiles associated with pad construction) will be covered with materials such as but not limited to jute

netting, and burlap fabric. In addition, the appropriate seed mixture will be applied over covered stockpiles to further stabilize the soils.

Finding on the Public Land Health Standard for upland soils: Soils within the project area meet the criteria established in the standard for upland soils. With successful reclamation, the proposed action would not change this status.

VEGETATION (includes a finding on Standard 3)

Affected Environment: There are four principal plant communities on public land in the project area that would be impacted by construction of the six well pads and associated access roads and pipelines:

- A basin big sagebrush community with a grass/forb understory on alluvial deposited soils in the drainage bottoms. This community is a Foothill Swale ecological site.
- A Wyoming sagebrush community with a grass/forb understory on upland areas. This community forms the sagebrush parks that are intermingled within pinyon/juniper woodlands in this part of the basin. This community is a Rolling Loam ecological site.
- A grass and forb herbaceous community on drier aspects of steep drainage slopes, most generally south and west aspects. This community has a very scattered occurrence of pinyon/juniper and/or sagebrush on these steep slopes. This community is a Stony Foothills ecological site.
- The last principal plant community is the pinyon/juniper woodland ecological site. These woodlands occur on shallower upland soils, along ridge crests, and along north- or east-facing drainage slopes. Woodlands on upland sites have a dense tree cover with a sparse understory of grass, forbs, sagebrush and bitterbrush. Woodlands on southerly aspects are more open with a sparse understory of grass, forbs, sagebrush and bitterbrush. Woodlands on more northerly aspects have a dense tree cover with a more productive understory of grass, forbs and upland shrubs.

Well Pad O01 299: This well pad is located in a basin big sagebrush community on an alluvial fan deposit just off CR 91. A small area of pinyon/juniper woodland occurs on the southwest side of the pad and a small area of a barren Stony Foothills occurs on the north side. The bulk of the location is on the basin sagebrush Foothills Swale which consists of a mid-seral plant community with a species composition that is less than 50 percent similar to that of the potential community for the site, mainly due to a significant amount of cheatgrass. Also, annual vegetation production is about half of the potential for the site at about 900 to 1200 pounds (air dry) per acre.

Well Pad G24 299: This well pad and access road are in a Wyoming sagebrush Rolling Loam site. A pinyon/juniper woodland just enters on the east edge of the well pad. The site appearance is a Wyoming sagebrush park with numerous young pinyon/juniper trees encroaching into the park from the adjacent woodland. This rolling loam site has a mid-seral plant community with a species composition that is less than 50 percent similar to that of the potential community for the site, mainly due to the significant cover of pinyon/juniper. Also, annual vegetation production is about half of the potential for the site at about 400 to 500 pounds (air dry) per acre.

Well Pad N02 199: This well pad and the access route occur on mostly barren soils with a very sparse cover of native forbs and widely scattered clumps of Wyoming sagebrush and pinyon or juniper trees. Soils along the access route and at the well pad are very coarse and droughty with sandstone outcrops indicating very shallow soil overlying sandstone bed rock. The well pad sits at the very edge of a large Wyoming sagebrush park. The ecological site at the well pad and along the access route is likely a Stony Foothills with annual vegetation production at less than 100 pounds (air dry) per acre.

Well Pad J23 199: This well pad sits along the upper edge of a very large Wyoming sagebrush park on 84 Mesa. The existing two-track road to the location (about 1 mile) traverses ½ mile through a Wyoming sagebrush park and ½ mile through a pinyon/juniper woodland. About 0.1 mile of new road from the end of the two-track to the well pad location would be in the Wyoming sagebrush park. The Wyoming sagebrush community (Rolling Loam site) has a late-seral plant community with a species composition that is near the potential community for the site. Annual vegetation production is near potential for the site at about 600 to 800 pounds (air dry) per acre.

Well pad O28 1N99: This pad is located on the toe slope of a steep side draw to Trail Canyon. The well pad would sit partly on alluvial deposited soils in the draw and cut into the hill side on the northeast and northwest corners of the pad. The vegetation type on alluvial soils is a basin sagebrush dominated community. The vegetation on the northeast corner is a sparse pinyon/juniper woodland type. The northwest corner of the pad would cut into a shale barren slope with very little vegetation cover. The short access road from CR 24X would pass through sagebrush.

Well pad H33 1N99: This pad is located on a relatively flat area in the valley bottom of Trail Canyon at the confluence of several large drainages. The vegetation at the location is mostly basin sagebrush with small grass openings intermingled. The access road would follow an existing two-track road from CR 24X, traversing the same vegetation type. The south edge of the pad would cut the toe of the valley slope which is a more open sagebrush community with a few scattered pinyon and juniper trees.

Plant Species Composition and Cover at each Well Pad

Species/% Cover	O01 299	G24 299	N02 199	J23 199	O28 1N99	H33 1N99
Pinyon/Juniper	< 1 %	30-50 %	1 to 2 %	-----	5 %	
Basin Sagebrush	40-50 %	-----	-----	-----	25-40 %	30-35 %
Wyoming Sagebrush	----	15-25 %	2-5 %	10-20 %		
Rubber Rabbitbrush	2-5 %	-----	-----	-----	2-5 %	< 1 %
Low Rabbitbrush	-----	-----	-----	5-10 %		
Greasewood	2-5 %	-----	-----	-----		
Winterfat	-----	< 1 %	-----	1-2 %	< 5 %	5 %
Snakeweed	-----	2-5 %	-----	5-10 %	2-5 %	< 5 %
Native grasses	5-10 %	10-15 %	< 1 %	15-25 %	15-35 %	45-60 %
Native forbs	5-10 %	5-10 %	1-2 %	10-15 %	5-10 %	5-10 %
Cheatgrass	15-20 %	-----	-----	-----	10-15 %	< 1 %

Species/% Cover	O01 299	G24 299	N02 199	J23 199	O28 1N99	H33 1N99
Bare ground	15-20 %	15-20 %	80-90 %	20-30 %	25-30 %	15-20 %

Environmental Consequences of the Proposed Action: At most, an estimated 57 acres of disturbance could occur with construction of the facilities proposed including upgrades of existing two-track roads. The actions would remove all vegetation from the disturbed areas. About 21 acres of this disturbance would occur from construction of the six well pads and about 36 acres from construction or upgrading of access roads/pipelines.

Disturbance at each Location

Location	Well Pad	Access Road/Pipeline
O01 299	3.5 ac. of Foothills Swale	None
G24 299	3.5 ac. of Rolling Loam	1.4 ac. of Rolling Loam
N02 199	3.5 ac. of Stony Foothills	7.0 ac. of Stony Foothills 2.1 ac of Foothills Swale
J23 199	3.5 ac. of Rolling Loam	18.7 ac. of Rolling Loam 2.6 ac. of Pinyon/Juniper
O28 1N99	3.6 ac. of Foothills Swale	0.4 ac of Foothills Swale
H33 1N99	3.2 ac. of Foothills Swale	3.6 ac. of Foothills Swale

The disturbance associated with construction of the well pads could be short term and remain non-vegetated for only a short period of time during the drilling phase. A portion of the well pad could be reclaimed following the drilling phase leaving only the production area of the well pad and the road travel surface non-vegetated. As much as 75 percent of the original disturbance could be returned to production of desirable vegetation within 3 to 5 years. The remaining disturbance could remain non-vegetated for a considerable length of time depending upon the success and life expectancy of the wells on the pads.

Disturbances associated with the proposal would be subject to an invasion of very competitive weedy plants, some native, some not. Invasion of these weedy species can create problems in future reclamation efforts. It usually takes a couple of growing seasons for these species to develop sufficient seed for dominance of the disturbance. The longer the disturbance remains non-vegetated, the greater the chance for invasion of these weedy plants onto the site. Once the disturbance becomes dominated by weedy species, reclamation with desirable native perennial species becomes very difficult. What should be a short-term impact could become a long-term invasion of weedy species which usually requires additional resources and strategies to control the unwanted vegetation before successful reclamation can be achieved.

Loss of basin big sagebrush from the Foothills Swale ecological site is expected to be a short-term impact. This particular variety of sagebrush is very competitive in re-establishing on disturbed areas by means of natural processes. It is expected to re-establish on disturbed areas within five years with pre-disturbance levels achieved within 15 years.

The loss of Wyoming sagebrush from the Rolling Loam upland sites would take much longer for this shrub to achieve pre-disturbance levels. It could take 15 years for this form of sagebrush to re-enter the disturbed areas and as long as 30 years to achieve pre-disturbance levels.

The pinyon or juniper trees removed by disturbance would be a long-term loss. It is likely to take at least 100 years for trees to begin showing up on the disturbed sites.

Environmental Consequences of the No Action Alternative: None

Mitigation: All disturbed areas for the pipeline and roads with the exception of the road travel surface would be reclaimed within the first growing season or prior to the first full growing season following disturbance with one of the following seed mixes:

Well Pads G24 299, N02 199 and J23 199

Native Seed Mix #2	
Species	**Seeding Rate (Pure Live Seed)***
Western wheatgrass (Rosanna)	2.0 lbs/ac
Indian ricegrass (Rimrock)	2.0 lbs/ac
Bluebunch wheatgrass (Whitmar)	1.0 lbs/ac
Thickspike wheatgrass (Critana)	2.0 lbs/ac
Green needlegrass (Lodorm)	1.0 lbs/ac
Globemallow or Utah sweetvetch	0.5 lbs/ac
* Seeding rate for drill seeding. Double the rate for broadcast/harrow seeding	

Well Pad O01 299

Native Seed Mix #5	
Species	**Pure Live Seed***
Basin Wildrye (Magnar)	2 lbs/ac
Western wheatgrass (Rosanna,)	3 lbs/ac
Bluebunch wheatgrass (Secar)	1 lbs/ac
Thickspike wheatgrass (Critana)	2 lbs/ac
Fourwing saltbush (Wytana)	1 lbs/ac
* Seeding rate for drill seeding. Double rate for broadcast/harrow seeding	

Well Pads O28 1N99 and H33 1N99

Native Seed Mix #5	
Species	**Pure Live Seed***
Basin Wildrye (Magnar)	2 lbs/ac
Western wheatgrass (Rosanna)	3 lbs/ac
Bluebunch wheatgrass (Secar)	1 lbs/ac
Thickspike wheatgrass (Critana)	2 lbs/ac
Fourwing saltbush (Wytana)	1 lbs/ac
Utah sweet vetch	0.5 lb/ac
* Seeding rate for drill seeding. Double rate for broadcast/harrow seeding	

Successful re-vegetation should be achieved within three years. The operator will be required to monitor the project site(s) for a minimum of three years post construction to detect the presence of noxious/invasive species. Any such species that occur will be eradicated using materials and methods approved in advance by the Authorized Officer.

Areas of the four well pads not used during any production phase, including cut and fill slopes, would be contoured to a slope of about 5:1, and would have topsoil redistributed and re-

vegetated with Native Seed Mixture #5 prior to the first full growing season following completion of drilling.

Final reclamation of roads and well pads following abandonment would be achieved with the native seed mixes noted above.

Finding on the Public Land Health Standard for plant and animal communities (partial, see also Wildlife, Aquatic and Wildlife, Terrestrial): The plant communities within the area of the proposed action have an appropriate structure and diversity of species which meet the criteria established in the standard for vegetation. With successful reclamation, the proposed action would not change this status.

WILDLIFE, AQUATIC (includes a finding on Standard 3)

Affected Environment: There is no aquatic wildlife within the project area that will be impacted.

Environmental Consequences of the Proposed Action: None.

Environmental Consequences of the No Action Alternative: None.

Mitigation: None.

Finding on the Public Land Health Standard for plant and animal communities (partial, see also Vegetation and Wildlife, Aquatic): As there is no aquatic wildlife to be impacted within the project area, the standard is not applicable.

WILDLIFE, TERRESTRIAL (includes a finding on Standard 3)

Affected Environment: The project area includes the Trail Canyon, Duck Creek, Stake Springs Draw and Ryan Gulch sections of the Piceance Creek Basin. Elevation varies from 6500 feet to 8000 feet on Calamity Ridge. The ridges tend to be moderately flat, separated by major drainages every several miles and with many smaller side draws. The major drainage bottoms are typically basin big sagebrush with a significant greasewood component. The flatter ridges are a mosaic of sagebrush flats and pinyon/juniper woodland. Younger pinyon/juniper trees are encroaching on many of the sagebrush flats. Slopes into the larger drainages are mostly mature pinyon/juniper woodland. This area is primarily public land open to the public. Private land is located along the major drainage systems. The Division of Wildlife (DOW) also has considerable ownership along the major drainages as part of the Piceance Creek Wildlife Area.

The entire project area is encompassed by deer and elk winter ranges. With the exception of the two locations in Trail Canyon, big game occupy these areas primarily during the late fall through mid-winter periods. Field observations during October, 2004 in the form of tracks and droppings, indicated only light use was being made by deer and elk during the year at the various

well locations. Well site G24 299 above Ryan Gulch was the lone exception, as droppings and recent tracks indicated the area received moderate use by both deer and elk. The Trail Canyon sites are within mapped severe winter range for elk (i.e., representing late winter/early spring distribution), but because these sites are immediately adjacent to a major all-weather county road, the functional utility of the access corridor and pad sites for elk is severely limited. There are no practical benefits that would be derived in applying timing limitations to the development of these pads.
The relatively flat ridges and moderate slopes into the larger drainages provide little cliff habitat for raptor nesting. No significant cliffs were noted in the vicinity of any well sites or access roads. The mature pinyon/juniper woodland located on some ridge tops and on canyon slopes provides nesting habitat for accipiters (Cooper's and Sharp-shinned hawks), owls and red-tailed hawk. These sites were surveyed during the spring and summer of 2005 to determine the status of raptor nesting.

Well Site N02 199: The access road and well are located in open pinyon/juniper and sagebrush habitat. Trees along the access route and on the ridge to the north are mature. The well pad is primarily in sagebrush with scattered trees located on the slope to the north. Suitable mature pinyon/juniper woodlands along the access route and in the vicinity of the well location were surveyed for raptor nests on April 14, 2005. The ridge north of the access road and well location provides the most suitable stands for raptor nesting. The ridge top and stands adjacent to the access route were searched, but no evidence of raptor nesting was noted.

Well Site J23 199: The mile long access road from CR 24 to the well site is a two-track road winding through sagebrush flats and mature pinyon/juniper woodland. The well pad is located in open sagebrush with mature pinyon/juniper to the south. Considerable horse sign was noted at this location. Raptor nest surveys were conducted on July 27 and 30, 2005 on mature pinyon/juniper woodland occurring along the access route and south of the well location. A cluster of three nests were noted along the access route in the vicinity of a Shell core-hole drill pad located on the route. One nest was in very poor condition with only a small portion of the stick material remaining (Nest #1:12S 0716483 4425242). The other two nests were substantial stick structure (Nest #2:12S 0716454 4425188 and Nest #3: 12S 0716506 4425271). All three nests were located in large pinyon trees and had been previously flagged with red/black candy-striped flagging. None of these nests appeared to have been active this year. Several raptor pellets and a small mammal jaw bone located under nest #2 indicate the nest is likely that of a great horned owl. All three nests are within 80 yards of the proposed access route. A fourth nest (12S 0716200 4424588) was located south of the well location in a large pinyon tree. This site was active this year with raven feathers, droppings and numerous pellets located beneath the nest tree. Evidence indicates this was likely a great horned owl nest.

Well Site O01 299: The well site is located adjacent to an existing road in basin big sagebrush flat at the mouth of a side draw to Stake Springs Draw. Adjacent side slopes and ridge lines are mature pinyon/juniper woodland. Understory vegetation is sparse and consists of cheatgrass, prickly pear cactus and Indian ricegrass. The adjacent slopes and ridge tops were surveyed for raptor nests on April 14, 2005. Although there are pockets of suitable trees on the ridges surrounding the well site, much of the area is covered with smaller trees that are marginal for raptor nesting. No evidence of raptor nesting was noted at the site.

Well Site G24 299: The 0.3 mile access road and the well pad are located in mature pinyon/juniper woodland on the edge of a sage brush flat. The understory is a mix of true mahogany and Wyoming big sagebrush with lesser amounts of bitterbrush. Mature pinyon/juniper on the ridgeline to the east overlooking Ryan Gulch provides excellent raptor nesting habitat. The mature woodland was searched for evidence of raptor nesting on April 14, 2005. None was noted in the vicinity of the well pad or access route.

Well Sites H33 1N99 and O28 1N99 and pipeline route to Calamity Ridge: The well sites and access roads are located in basin big sagebrush with pinyon/juniper woodlands located on adjacent hillsides. Woodlands surrounding the two well sites, along with two small rock outcrops on the north side of the county road, were searched for evidence of raptor nests on July 27, 2005. No evidence of raptor nesting was noted. Much of the woodland habitat is considered marginal raptor nesting habitat due to small tree size or steepness of slope.

Environmental Consequences of the Proposed Action: The construction of six well pads and associated access roads and pipelines would remove an estimated 57 acres of elk and deer foraging habitat. This will be a combination of basin big sagebrush, pinyon/juniper woodland, Wyoming big sagebrush and mountain shrub habitats. Construction activity along with drilling and well maintenance will subject deer and elk to increased disturbance. This will be most significant during the winter period and at well sites N02 199 and G24 299 where new roads will provide additional vehicle access.

Construction and use of the access road to well J23 199 would disturb a cluster of raptor nests located within 80 yards of the route. Construction and drilling at the well site could disturb a great horned owl nest site located within ¼ mile of the pad location.

Environmental Consequences of the No Action Alternative: No additional disturbance associated with commercial oil and gas development would occur to wintering big game, or net loss of elk and deer winter range habitat would occur at this time and this place. No raptor nesting habitat would be removed and woodland habitat adjacent to access corridors and well pads would not be subject to increased levels of human disturbance. No raptor nesting habitat would be removed and woodland habitat adjacent to access corridors and well pads would not be subject to increased levels of human disturbance.

Mitigation: In order to limit disturbance to big game and to possible raptor nesting activity, it is recommended that general public access to the N02 199 location be restricted by means of a lockable gate placed at a point as close as possible to the proposed access junction with the county road. The project proponent will be responsible for constructing and maintaining this feature with the objective of effectively deterring unauthorized bypass (e.g., sidehill cuts or wing-fences). The selected point would be subject to the approval of the authorized officer. This gate should be emplaced by the time initial well completion activities are complete and should remain locked at all times, except for occasional workover or additional completion activities.

Consistent with the White River Resource Area Resource Management Plan, construction, drilling, and completion operations associated with location J23 199 would be subject to a timing restriction disallowing activity from Feb. 15 to Aug. 1 or until it has been determined that raptor nest site #4 (12S 0716200 4424588) is not occupied or the young have fledged.

In addition, the BLM may require that the access road to well site J23 199 be rerouted to avoid a cluster of raptor nests. It has been suggested that rather than passing through the core drill site, the road should veer to the east, remaining in the sagebrush and paralleling the swale for ¼ mile until intersecting the original access route. Further, it may be necessary to remove the gate on the back side of the existing core-hole location and an additional post placed in the opening and permanently wired shut. These actions would reduce the majority of the disturbance to the cluster of three raptor nests. Decisions as to the applicability of these measures would be made by the Authorized Officer during subsequent NEPA analysis for this well.

Only the highest potential raptor habitat may require re-surveys should development occur after 2005 during the nesting season. This would include well sites G24 299 and J23 199. At other well locations, suitable woodland habitat will not be removed and may only be subjected to disturbance. Since these areas have been surveyed with no evidence of nesting found and for the most part are marginal nesting habitat, no additional surveys are recommended.

Finding on the Public Land Health Standard for plant and animal communities (partial, see also Vegetation and Wildlife, Terrestrial): This project, as mitigated, would not jeopardize the viability of any animal population. It would have no measurable consequence on terrestrial habitat condition, utility, or function, nor have any discernible effect on animal abundance or distribution at any landscape scale. The public land health standard would thus be met.

OTHER NON-CRITICAL ELEMENTS: For the following elements, only those checked in the last column will be addressed further in this EA.

Non-Critical Element	NA or Not Present	Applicable or Present, No Impact	Applicable & Present and Brought Forward for Analysis
Access and Transportation			X
Cadastral Survey	X		
Fire Management			X
Forest Management	X		
Geology and Minerals			X
Hydrology/Water Rights	X		
Law Enforcement		X	
Noise			X
Paleontology			X
Rangeland Management			X
Realty Authorizations		X	
Recreation			X
Socio-Economics			X

Non-Critical Element	NA or Not Present	Applicable or Present, No Impact	Applicable & Present and Brought Forward for Analysis
Visual Resources			X
Wild Horses			X

ACCESS AND TRANSPORTATION

Affected Environment: The principal access routes into the project area are CR 24 from Ryun Gulch in the south and CR 24X from Calamity Ridge in the north. The county road system in the area is well developed and only one of the proposed action sites is more than about ½ mile from a county road. As county roads, access along them is public and legal. All of the roads are in good condition but are subject to seasonal closure as a result of weather, especially the access route from the north over Calamity Ridge which is impassable during much of the winter.

The entire proposed action is within an area where motorized vehicle traffic is limited to existing roads from October 1 to April 30 each year. Cross-country motorized vehicle travel is allowed from May 1 to September 30 as long as no resource damage occurs as a result.

Environmental Consequences of the Proposed Action: Construction and operation of up to six well pads and associated access roads and pipelines and drilling of up to twelve natural gas wells would cause a temporary increase in traffic up the road for a period of two or four months at each site - perhaps up to 24 months overall if only one drill rig were used. After that, well service traffic to the sites would be regular but of low intensity. Simultaneous construction and drilling at the sites would intensify the use of the local road system but would reduce the duration of the increased traffic.

New access roads to most of the well pads would have no impact on access to public lands since the pads are near the existing access road and do not improve off-road access. However, the access road to the N02 199 well pad would be a new road into an area that does not currently have access and, if ungated, would permit access into a new area. Gating as recommended in the Terrestrial Wildlife Section would constrain that access and reduce the likelihood of secondary routes developing off the new road.

Environmental Consequences of the No Action Alternative: None.

Mitigation: Implement road construction and maintenance standards and procedures described in the APD's 13 Point Surface Use Plan.

FIRE MANAGEMENT

Affected Environment: The actions proposed all occur within an area which has minimal constraints on the use of wildfires to achieve public land health objectives. Nearly all the plant communities in the general vicinity of the project area are mature with considerable fuel loads. Most of these communities are rejuvenated by fire to maintain healthy, diverse plant communities.

Environmental Consequences of the Proposed Action: Development of oil and gas facilities in this area could restrict BLM's ability to use wildfires to achieve public land health objectives for the plant communities in and around these facilities. Any naturally occurring fires

in this area would likely be put out while they are small. Large areas of mature vegetation would continue a downward decline in diversity of plant species, especially herbaceous species.

Environmental Consequences of the No Action Alternative: None

Mitigation: None.

GEOLOGY AND MINERALS

Affected Environment: The surficial geology in the project area is the shallow dipping Tertiary Uinta Formation within the Green River Formation (Tweto, 1979). The Green River Formation is comprised of organic-rich shaley limestone, shale, marlstone, and sandstone, and is rich in fish, insect and plant fossils. The Green River Formation contains very substantial amounts of "oil shale" which is actually a kerogen-rich marlstone (Foutz, 1994). Other mineral resources in the project area include gas, coal, and nahcolite. EnCana's targeted zone in all the wells is in the Mesaverde. During drilling, potential water, oil shale, coal, oil and gas zones would be encountered from the surface to the targeted zone. This area is identified in the ROD/RMP as available for underground oil shale leasing and development.

Proposed well pad O01 299 is located in the same location as Shell Frontier's recently drilled geo/hydrology well 21-299

Environmental Consequences of the Proposed Action: The cementing procedure of the proposed actions isolates the formations and, if properly done, would prevent the migration of gas, water, and oil between formations. The coal zones located in the Mesaverde will also be isolated during this procedure. These zones are at a depth greater than 3,000 feet and the coal is not recoverable by conventional methods. Development of these wells would deplete the hydrocarbon resources in the targeted formation. Depending on the number of additional wells, future development of underground mining of the oil shale in and around existing wells may be limited. The area in the mouth of the draw for proposed well pad O01 299 is too small to accommodate both O01 299 and Shell Frontier's 21-299 without adversely impacting Shell's hydrologic monitoring wells and data collection at this location.

Environmental Consequences of the No Action Alternative: None.

Mitigation: Relocate well pad O01-299.

NOISE

Affected Environment: Traffic on county roads in the project area and natural gas drill rig operation are generally the primary sources of man-made noise. Those people subject to noise generated in the project area are, for the most part, employees of the oil and gas companies. Ranchers and hunters, in season, are also subject to noise generated in the area.

Environmental Consequences of the Proposed Action: Well pad construction and well drilling would generate noise for two to four months at each site. The Colorado Oil and Gas Commission (COGCC) have established a noise limit of 55 decibels (dBA) as the limit for oil and gas facilities in residential areas. (This can be compared to average highway noise of 60 dBA at 100 feet.) The 55 dBA limit would be reached at 1,500 feet from a well pad construction site and at 800 feet from and operating drill rig, although the rig would be operating 24 hours a day for the period of drilling. Local wind and terrain effects could cause that distance to vary considerably in different parts of the project area and at different times.

Environmental Consequences of the No Action Alternative: None

Mitigation: None.

PALEONTOLOGY

Affected Environment: The proposed well pads and associated road and pipeline construction all are located in an area mapped as the Uinta Formation (Tweto 1979). BLM has classified the Uinta as a Condition I formation, meaning that it is a known producer of scientifically significant fossils.

Environmental Consequences of the Proposed Action: Since the actions proposed in the project area would all occur within the Uinta formation, there is potential for impacting fossil resources if it is necessary to excavate into the underlying bedrock formation to construct the well pads, including the reserve/blooie pit, to construct or upgrade the access roads, or to install the pipelines.

Environmental Consequences of the No Action Alternative: None

Mitigation: All exposed rock outcrops in the project area shall be examined by an approved paleontologist with a report detailing the results of the inventory and any mitigation recommendation shall be submitted to the BLM prior to the initiation of construction on any of the well pads or associated roads and pipelines. A monitor shall be present at any time that it becomes necessary to excavate into the underlying bedrock formation in order to bury pipelines, level well pads or excavate reserve/blooie pits, or to construct any project features.

The operator is responsible for informing all persons who are associated with the project operations that they will be subject to prosecution for knowingly disturbing paleontological sites, or for collecting fossils. If fossil materials are uncovered during any project or construction activities, the operator is to immediately stop activities in the immediate area of the find that might further disturb such materials, and immediately contact the authorized officer (AO). Within five working days the AO will inform the operator as to:

- whether the materials appear to be of noteworthy scientific interest
- the mitigation measures the operator will likely have to undertake before the site can be used (assuming in situ preservation is not feasible)

If the operator wishes, at any time, to relocate activities to avoid the expense of mitigation and/or the delays associated with this process, the AO will assume responsibility for whatever recordation and stabilization of the exposed materials may be required. Otherwise, the operator will be responsible for mitigation cost. The AO will provide technical and procedural guidelines for the conduct of mitigation. Upon verification from the AO that the required mitigation has been completed, the operator will then be allowed to resume construction.

Should fossil resources be discovered at any time during construction, all construction activity in the vicinity of the discovery shall cease until the BLM and an approved paleontologist have time to evaluate the discovery and recover the remains. Work shall not resume in the area of the find without written approval of the authorized officer.

RANGELAND MANAGEMENT

Affected Environment: One or more of the six well pads would be located on one of four grazing allotments. The following table shows which well pads would occur on which grazing allotment.

PROPOSED WELL PAD	GRAZING ALLOTMENT
O01 299	#06027-Square S
G24 299	#06026-Reagles
N02 199	#06031-Duck Creek
J23 199	#06030-Yellow Creek
O28 1N99, H33 1N99	#051426-Duck Creek

The Square S grazing allotment has two permit holders authorized to graze cattle on 64,050 acres of public land for a total of 3,537 animal unit months (AUMs). An AUM equates to the forage needs of a mature cow with calf for one month. The allotment is utilized May through February the following year. The area of the allotment where well pad O01 299 would be located is utilized late spring/early summer, then again in the fall.

The Reagles grazing allotment has two permit holders authorized to graze cattle on 18,367 acres of public land for a total of 955 AUMs. The allotment is utilized May through mid-December. The area of the allotment where well pad G24 299 would be located is utilized late spring then again in the fall.

The Yellow Creek grazing allotment has one permit holder authorized to graze cattle on 63,191 acres of public land for a total of 2,624 AUMs. The allotment is utilized mid-April through January the following year. The area of the allotment where well pad J23 199 would be located is utilized late spring/early summer and again in the fall.

The Duck Creek Allotment is permitted for grazing 130 cattle yearlong on 21,802 acres of public land. The allotment is part of a grazing management plan which provides periods of grazing deferment or rest on a prescribed schedule.

No rangeland improvements exist within the areas of the six well pads.

Environmental Consequences of the Proposed Action: The actions proposed could result in a 9 to 10 AUM forage loss to livestock from the estimated 57 acres of disturbance. Among the four grazing allotments involved, the expected forage loss would be distributed as follows:

- Square S grazing allotment 0.6 AUM
- Reagles grazing allotment 0.8 AUMs
- Yellow Creek allotment 4.1 AUM
- Duck Creek allotment 2.1 AUM
- Duck Creek allotment 1.8 AUM

The amount of forage that could be lost on any of the grazing allotments is not significant. Forage availability within the allotments is sufficient to compensate for the small amounts of forage that would be lost as a result of the proposed activities. Most of the loss would be only short-term until successful reclamation of disturbed areas had occurred. Reclamation of unused portions of the roads and well pads would likely offset the short-term forage loss within 3 to 5 years. However, successful reclamation of the 2 locations within the Piceance- East Douglas HMA could be compromised by excessive wild horse use, particularly for location J23 199, because the present population of wild horses is more than three times the prescribed appropriate management level for the HMA.

No long-term loss of forage for livestock is expected. Reclamation of the unused portions of the roads and well pads could create at least as much forage for cattle as that lost during construction of the proposed facilities. The plant species used in reclamation would increase total herbaceous vegetation production of species palatable to cattle. Complete reclamation of the roads, pipeline and well pads would probably provide a small long-term increase above the present forage available to cattle.

There could be some annoyance impact to cattle from construction and drilling activities and associated traffic, especially if this activity coincides with grazing use near the locations. The only proposed location near any watering facility or travel area where cattle would be concentrated is well pad H33 1N99 which is near a watering facility. The water well and watering troughs near this are not expected to be affected by construction of this location. The disturbance to livestock would be minimal and would not interfere with proper grazing use of areas near the proposed locations.

Physical harm to livestock could occur from proposed actions such as traffic accidents, open pits or trenches or consumption of contaminated water or forage. Any livestock losses from operations conducted by the applicant would require a negotiated settlement between the applicant and the livestock owner.

Environmental Consequences of the No Action Alternative: None

Mitigation: None.

REALTY AUTHORIZATIONS

Affected Environment: All of the proposed well pads, new access roads and pipelines would be authorized as part of the development of the Canary and Left Fork Units. These facilities are all located on lease and within the unit boundaries and will not require a right-of-way authorization.

Environmental Consequences of the Proposed Action: None.

Environmental Consequences of the No Action Alternative: None.

Mitigation: None.

Environmental Consequences of the No Action Alternative: None.

Mitigation: None.

RECREATION

Affected Environment: The proposed action occurs within the White River Extensive Recreation Management Area (ERMA). BLM custodially manages the ERMA to provide for unstructured recreation activities such as hunting, dispersed camping, hiking, horseback riding, wildlife viewing and off-highway vehicle use.

The Yellow Creek drainage in which the proposed actions are located most closely resembles the Recreation Opportunity Spectrum (ROS) class of Roaded Natural (RN). RN settings are characterized by a generally natural environment with evidence of rural residences and agricultural land uses. Resource manipulations are noticeable and are harmonious with the natural environment but substantial modifications may be encountered. The areas provide about equal opportunities for interaction with other visitors and to experience isolation from the sites and sounds of man.

Most of the project area is public land with legal access but recreation use is low. There are no developed recreation facilities and few natural attractions that would encourage dispersed recreation. The principle recreation activity that does occur is big game hunting.

Environmental Consequences of the Proposed Action: The actions proposed do not violate the area's RN setting. Neither would the construction, drilling and well service activities associated with the project greatly diminish the expected recreation experience. The rather large area over which the project activities would occur helps to minimize the impact. If drilling or pad construction coincides with hunting seasons (September through November), it could disrupt the experience sought by some hunter in the areas immediately adjacent to natural gas development activity.

Environmental Consequences of the No Action Alternative: None.

Mitigation: None.

SOCIOECONOMICS

Affected Environment: The proposed actions within the project area would be developed in Rio Blanco County but construction and drilling resources would also be drawn from Garfield County and Mesa County. Rio Blanco County had an estimated 2003 population of 6,033, almost unchanged from the 1990 level of 6,051. The major communities in the county are Meeker (2,263 population in 2003) and Rangely (2,088). The county underwent a substantial economic and demographic growth in the late 1970's and early 1980's as major energy companies attempted to develop oil shale as a national energy fuel source. After a decline in jobs and population from the boom levels, the number of jobs and people in the county has remained static. Currently, the government sector makes up almost a third of all jobs in the county. The traditional farming and ranching sector has been supplemented in the last few years by a growing number of jobs in the oil and gas extraction industry as drilling activity has expanded. Many of the resources for development of the oil and gas resource come out of Garfield County or Mesa County and locate in Rio Blanco County on only a temporary basis.

Other than natural gas exploration and development, livestock grazing is the only other economic activity that currently takes place within the project area.

Environmental Consequences of the Proposed Action: The employment required for construction of the facilities in the Canary/Left Fork project area would most likely not be new employment but workers already available in the area. Some may very well reside in other western Colorado counties. Motels, restaurants, grocery stores, gas stations, vehicle and equipment repair shops could all experience some additional activity. The facilities developed by the proposed actions would expand the local property tax base and the gas produced by the proposed wells would generate increased federal royalties. Half of those royalties would be returned to the State of Colorado and to jurisdictions within Colorado, including Rio Blanco County. This net effect of these impacts would be considered beneficial but low.

Environmental Consequences of the No Action Alternative: None.

Mitigation: None.

VISUAL RESOURCES

Affected Environment: The BLM lands in the project area have received a VRM Class III designation. The objective of this class is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.

Environmental Consequences of the Proposed Action: Visual sensitivity in the area is low because use is low and because no special management areas or other uses rely on the area's visual quality. Distance and intervening terrain shield the area from the most highly traveled route in the area (Piceance Creek Road [RBC 5]), which would be the route most frequently traveled by a casual observer. Local ranchers, a growing number of oil and gas company employees and contractors, and a few recreationists during hunting season make up the potential viewing public. The proposed well pads, with their associated access roads and pipelines, would alter the landscape character. Removal of vegetation and recontouring of the natural surface during construction would introduce linear features into the landscape and offer contrasting soil and vegetation colors and patterns that had not previously been there. This change would lessen in the long-term as exposed areas were reclaimed and bare soil was not so extensively evident. Additionally, above-ground natural gas production facilities such as well heads, metering sheds, condensate tanks, and compressor facilities would introduce man-made industrial facilities that would attract attention of a casual observer for a short period of time while traveling past them on RBC 24X (gravel road) due to their size, color and shape. The proposed action would not dominate the view since changes to the characteristic landscape would be located below the skyline and have a backdrop of natural terrain features. The use of natural paint tones would reduce the visual impact of the facilities.

The facilities at the O28 1N99, H33 1N99, and O01 299 well sites are each located on or very near a county road and would tend to dominate the immediate foreground view. However, viewed from the middle-background, the changes in the overall landscape of the project area would appear to be moderate and would not dominate the natural character of the landscape since they are dispersed over a fairly large area. The character of the landscape would be partially retained, retaining the standards of the VRM III classification.

Environmental Consequences of the No Action Alternative: None

Mitigation: All permanent (onsite for six [6] months or longer) structures, facilities and equipment placed onsite shall be low profile and painted Munsell Soil Color Chart Juniper Green or equivalent within six months of installation.

Disturbed areas on well pads not needed for production equipment shall be restored as nearly as possible to their original contours and seeded. Cut and fill slopes shall be stabilized with vegetation, matting or equivalent measures to prevent erosion and reduce the color contrast.

WILD HORSES

Affected Environment: Two of the proposed locations, O01 299 and J23 199, are located within the East Douglas/Piceance Basin Herd Management Area (HMA). Location O01 299 is located alongside CR 91 which is the east boundary of the HMA. Very little horse sign (dropping, trails, etc) was noted in the area of the proposed well location. This area probably sees only occasional wild horse use because of the proximity to CR 91.

Location J23 199, on the other hand, is located in an area that sees considerable wild horse activity. This well site is located on the upper side of a large Wyoming sagebrush expanse that provides quality foraging areas for horses. On the other side of the well site is a mature pinyon/juniper woodland that provides hiding and escape cover for horses.

Environmental Consequences of the Proposed Action: Because well site O01 299 is located within marginal habitat for horses - on the very edge of the HMA next to CR 91 - and because of limited forage production and availability near the proposed well location, construction and drilling activities at this location are not expected to have any significant impact on wild horse use in this area.

Location J23 199 is in an area of the HMA which is frequented by wild horses throughout most of the year. The use of this transition area increases proportionally as the horse population increases. At present the number of wild horses using the Piceance portion of the HMA is about three times the prescribed AML. Construction and drilling activities at this location are expected to cause a short-term displacement of horses from the immediate area. The horses utilizing this general area have habituated to human activity because of nearby county roads which receive considerable use throughout most of the year. Because they are accustomed to such activity, horses will likely use areas within ¼ mile of the location during the drilling phase. During the production phase, horses will likely use any forage resources near and even on the location when minimal activity is occurring on the location.

A short-term forage loss for wild horses would occur with construction of the location. The disturbance expected from construction of well site J23 199 would result in about 4 AUMs of forage loss to grazing animals. It takes between 1.2 to 1.5 AUMs of forage production to support an adult horse for one month. A 4 AUM forage loss in this area is not expected to result in re-distribution of normal horse use within this area. This amount of loss can be absorbed from within adjacent foraging areas under normal environmental conditions.

There could be periods of the year with atypical environmental conditions that a forage loss could place added stress on the horses that normally utilize this area, especially during foaling season. Some of these uncharacteristic environmental conditions could include heavy snow cover in late winter, a drought period, a large fire within this area, a late spring green-up, etc. Such conditions could require implementation of a timing limitation to reduce the stress to mares and foals during the foaling season, which usually occurs between mid-March through early May. A timing limitation would be implemented only if construction of the well pad and/or drilling and completion activities were expected to occur during this period. Normal operations at this location following completion of the well would not require implementation of a timing limitation.

Reclamation of unused portions of the well pad, pipeline and/or road is expected to replace any short-term forage loss to wild horses within the 3 to 5 year period following completion of the well. Compete reclamation of the location upon abandonment is expected to provide a long-term increase in forage suitable for wild horses.

Other impacts to features of the HMA, such as watering areas, migration routes, etc, are not expected to occur with development of locations O01 299 and J23 199.

Environmental Consequences of the No Action Alternative: None

Mitigation: Implementation of a 60 day timing limitation may be required for well pad J23 199 as determined by the Authorized Officer, as provided by Lease Notice 3, White River Record of Decision and Approved Resource Management Plan, July, 1997:

> Lease Notice 3: This lease parcel encompasses habitat areas in a portion of a wild horse herd management area. In order to protect wild horses within this area, intensive development activities may be delayed for a specified 60 day period within the spring foaling period between March 1 and June 15.

This timing limitation would be implemented at this location only if atypical environmental conditions existed and expected development activities at this location are anticipated to cause undue stress to wild horses within the immediate area as determined by the Authorized Officer.

CUMULATIVE IMPACTS SUMMARY: One potential location in the project area, G35 199, is located on private surface and private mineral estate and was not directly evaluated in this document. Its contribution to overall impacts would be proportional to those described for the well pads on public land.

Cumulative impacts from oil and gas development were analyzed in the White River Resource Area PRMP/FEIS. Current development, including the actions proposed in the Canary/Left Fork project area, has not exceeded the foreseeable development analyzed in the PRMP/FEIS.

REFERENCES CITED

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PERSONS / AGENCIES CONSULTED: None

NTERDISCIPLINARY REVIEW:

Project Team		
Name	**Title**	**Area of Responsibility**
BLM Oversight		
Keith Whitaker	Natural Resource Specialist	Project Lead; Visual Resource Management
Paul Daggett	Mining Engineer	Geology and Minerals
Ed Hollowed	Wildlife Biologist	Migratory Birds; Threatened, Endangered and Sensitive Animal Species; Wildlife; Wetlands and Riparian Zones
Tamara Meagley	Natural Resource Specialist	Areas of Critical Environmental Concern; Threatened and Endangered Plant Species
Chris Ham	Outdoor Recreation Planner	Recreation; Wilderness; Access and Transportation
Mark Hafkenschiel	Rangeland Management Specialist	Vegetation; Invasive, Non-Native Species; Rangeland Management
Michael Selle	Archeologist	Cultural and Paleontological Resources
Nate Dieterich	Hydrologist	Air Quality; Water Quality, Surface and Ground; Hydrology and Water Rights; and Soils
Penny Brown	Realty Specialist	Realty Authorizations
Ken Holsinger	Natural Resource Specialist	Fire Management
Robert Fowler	Forester	Forest Management
Vern Rholl	Supervisory NRS	Wastes, Hazardous or Solid
WestWater Engineering (Third Party Contractor)		
Dan McWilliams	Senior Engineer	Air Quality; Water Quality, Surface and Ground; Hydrology and Water Rights; Geology and Minerals; and Soils
Steve Moore	Environmental Scientist	Areas of Critical Environmental Concern; Cultural Resources; Paleontological Resources; Wastes, Hazardous or Solid; Access and Transportation; Wilderness; Realty Authorizations; Recreation; and Visual Resources
Rusty Roberts	Range Conservationist	Threatened and Endangered Plant Species; Invasive, Non-Native Species; Wetlands and Riparian Zones; Vegetation; Fire Management; Rangeland Management; and Wild Horses
Doug McVean	Wildlife Biologist	Migratory Birds; Threatened, Endangered and Sensitive Animal Species; Wildlife, Terrestrial and Aquatic
Mike Klish	Environmental Scientist	Forest Management

Finding of No Significant Impact/Decision Record (FONSI/DR)

CO-110-2004-206-EA

FINDING OF NO SIGNIFICANT IMPACT (FONSI)/RATIONALE: The environmental assessment, analyzing the environmental effects of the proposed actions, has been reviewed. The approved mitigation measures (attached to the APDs as Conditions of Approval and to the right-of-way grants as stipulations) for the proposed actions - well 6615B and one additional well at location O28 1N99; potentially two wells each at locations H33 1N99, N02 199, J23 199, and G24 299, and all associated access roads and tie-in pipelines - result in a finding of no significant impact on the human environment. Therefore, an environmental impact statement is not necessary to further analyze the environmental effects of the above proposed actions.

WestWater Engineering, an environmental consulting firm, with the guidance, participation, and independent evaluation of the Bureau of Land Management (BLM) prepared this document. The BLM, in accordance with 40 CFR 1506.5 (a) and (c), is in agreement with the findings of the analysis and approves and takes responsibility for the scope and content of this document.

DECISION/RATIONALE: It is my decision to approve the proposed action with the exception of well pad O01 299 which is being withdrawn. The proposed actions are in concert with the objectives of the White River ROD/RMP in that they would allow development of federal oil and gas resources in a manner that provides reasonable protection for other resource values. Protection for other resource values will be assured by implementation of the mitigation measures described below and attached to the APD as Conditions of Approval and to the right-of-way grants as stipulations. As APDs are submitted for the proposed well pads, they will be given a 30 review period for subsequent NEPA analysis, which at that time applicable mitigation listed below and/or additional mitigation will be applied to the APDs as Conditions of Approval and to the right-of-way grants as stipulations.

MITIGATION MEASURES: 1. The proponent is responsible for abatement of dust created by construction or by project-related traffic. Potential dust abatement tools could include, among others, periodic watering as described in EnCana's 13 Point Surface Use Plan (2.K), other methods of treating road surfaces, and restriction of vehicle speed to levels that would minimize dust.

2. Permitting of all regulated air pollution sources through the Colorado Department of Public Health and Environment (CDPHE), Air Pollution Control Division, will assure compliance with all federal and state standards. The proponent will provide evidence to BLM that necessary permits have been acquired.

3. The operator is responsible for informing all persons who are associated with the project operations that they will be subject to prosecution for knowingly disturbing historic or archaeological sites, or for collecting artifacts. If historic or archaeological materials are

uncovered during any project or construction activities, the operator is to immediately stop activities in the immediate area of the find that might further disturb such materials, and immediately contact the Authorized Officer (AO). Within five working days, the AO will inform the operator as to:

- whether the materials appear eligible for the National Register of Historic Places,
- the mitigation measures the operator will likely have to undertake before the site can be used (assuming in situ preservation is not necessary),
- a timeframe for the AO to complete an expedited review under 36 CFR 800-11 to confirm, through the State Historic Preservation Officer, that the findings of the AO are correct and that mitigation is appropriate.

If the operator wishes, at any time, to relocate activities to avoid the expense of mitigation and/or the delays associated with this process, the AO will assume responsibility for whatever recordation and stabilization of the exposed materials may be required. Otherwise, the operator will be responsible for mitigation cost. The AO will provide technical and procedural guidelines for the conduct of mitigation. Upon verification from the AO that the required mitigation has been completed, the operator will then be allowed to resume construction.

4. Pursuant to 43 CFR 10.4(g) the holder of this authorization must notify the AO, by telephone, with written confirmation, immediately upon the discovery of human remains, funerary items, sacred objects, or objects of cultural patrimony. Further, pursuant to 43 CFR 10.4 (c) and (d), the holder must stop activities in the vicinity of the discovery and protect it for 30 days or until notified to proceed by the AO.

5. Eliminate any noxious or invasive plants before any seed production has occurred. Eradication should make use of materials and methods (Pesticide Use Proposal) approved in advance by the AO. Application of herbicides must be under field supervision of an EPA-certified pesticide applicator.

6. The operator will clean all off-road equipment to remove seed and soil prior to commencing operations on public lands within the project area.

7. The operator is required to collect and properly dispose of any solid wastes generated by the proposed actions.

8. Oil and gas development activities require a stormwater discharge permit from the Colorado Department of Public Health and Environment, Water Quality Control Division, for construction associated with well pads, pipelines, roads and other facilities. As a condition of the permit, a Stormwater Management Plan (SWMP) would be developed showing how Best Management Practices (BMPs) are to be used to control runoff and sediment transport. The applicant is required to have a copy of the SWMP on file with the Meeker Field Office and to implement the BMPs in that plan as on-site conditions warrant.

9. The White River Record of Decision and Approved Resource Management Plan (July, 1997) includes a list of standard Conditions of Approval to be applied to All Surface Disturbing Activities (COAs 1-12) and to Road Construction and Maintenance (COAs 13-62). The

applicant is required to be familiar with those standard COAs and to implement them as on-site conditions warrant.

10. Segregation of topsoil material and replacement of top soil in its respective original position (last out, first in) would assist in the reestablishment of soil health and productivity.

11. All disturbed areas for the pipeline and roads with the exception of the road travel surface would be reclaimed within the first growing season or prior to the first full growing season following disturbance with one of the following seed mixes:

Well Pads G24 299; N02 199 and J23 199

Native Seed Mix #2	
Species	**Seeding Rate (Pure Live Seed)***
Western wheatgrass (Rosanna)	2.0 lbs/ac
Indian ricegrass (Rimrock)	2.0 lbs/ac
Bluebunch wheatgrass (Whitmar)	1.0 lbs/ac
Thickspike wheatgrass (Critana)	2.0 lbs/ac
Green needlegrass (Lodorm)	1.0 lbs/ac
Globemallow or Utah sweetvetch	0.5 lbs/ac
* Seeding rate for drill seeding. Double the rate for broadcast/harrow seeding	

Well Pads O28 1N99 and H33 1N99

Native Seed Mix #5	
Species	**Pure Live Seed***
Basin Wildrye (Magnar)	2 lbs/ac
Western wheatgrass (Rosanna)	3 lbs/ac
Bluebunch wheatgrass (Secar)	1 lbs/ac
Thickspike wheatgrass (Critana)	2 lbs/ac
Fourwing saltbush (Wytana)	1 lbs/ac
Utah sweet vetch	0.5 lb/ac
* Seeding rate for drill seeding. Double rate for broadcast/harrow seeding	

Successful re-vegetation should be achieved within three years. The operator will be required to monitor the project site(s) for a minimum of three years post construction to detect the presence of noxious/invasive species. Any such species that occur will be eradicated using materials and methods approved in advance by the Authorized Officer.

Areas of the four well pads not used during any production phase, including cut and fill slopes, would be contoured to a slope of about 5:1, and would have topsoil redistributed and re-vegetated with Native Seed Mixture #5 prior to the first full growing season following completion of drilling.

Final reclamation of roads and well pads following abandonment would be achieved with the native seed mixes noted above.

12. General public access to the N02 199 location shall be restricted by means of a lockable gate placed at a point as close as possible to the proposed access junction with the county road. The project proponent will be responsible for constructing and maintaining this feature with the objective of effectively deterring unauthorized bypass (e.g., sidehill cuts or wing-fences) through well life. The selected point would be subject to the approval of the authorized officer. This gate should be emplaced by the time initial well completion activities are complete and should remain locked at all times, except for occasional workover or additional completion activities.

13. Consistent with the White River Resource Area Resource Management Plan, construction, drilling, and completion operations associated with location J23 199 would be subject to a timing restriction disallowing activity from Feb. 15 to Aug. 1 or until it has been determined that raptor nest site #4 (12S 0716200 4424588) is not occupied or the young have fledged.

In addition, the BLM may require that the access road to well site J23 199 be rerouted to avoid a cluster of raptor nests. It has been suggested that rather than passing through the core drill site, the road should veer to the east, remaining in the sagebrush and paralleling the swale for ¼ mile until intersecting the original access route. Further, it may be necessary to remove the gate on the back side of the existing core-hole location and an additional post placed in the opening and permanently wired shut. These actions would reduce the majority of the disturbance to the cluster of three raptor nests. Decisions as to the applicability of these measures would be made by the Authorized Officer during subsequent NEPA analysis for this well.

14. Only the highest potential raptor habitat may require re-surveys should development occur after 2005 during the nesting season. This would include well sites G24 299 and J23 199. At other well locations, suitable woodland habitat will not be removed and may only be subjected to disturbance. Since these areas have been surveyed with no evidence of nesting found and for the most part are marginal nesting habitat, no additional surveys are recommended.

16. Implement road construction and maintenance standards and procedures described in the APD's 13 Point Surface Use Plan.

17. All exposed rock outcrops in the project area shall be examined by an approved paleontologist with a report detailing the results of the inventory and any mitigation recommendation shall be submitted to the BLM prior to the initiation of construction on any of the well pads, compressor site or road/pipeline right-of-way. A paleontology monitor shall be present at any time that it becomes necessary to excavate into the underlying bedrock formation in order to bury the pipeline, level the well pad, excavate the reserve/blooie pit or to construct any project features.

18. The operator is responsible for informing all persons who are associated with the project operations that they will be subject to prosecution for knowingly disturbing paleontological sites, or for collecting fossils. If fossil materials are uncovered during any project or construction activities, the operator is to immediately stop activities in the immediate area of the find that might further disturb such materials, and immediately contact the authorized officer (AO). Within five working days the AO will inform the operator as to:

- whether the materials appear to be of noteworthy scientific interest
- the mitigation measures the operator will likely have to undertake before the site can be used (assuming in situ preservation is not feasible)

If the operator wishes, at any time, to relocate activities to avoid the expense of mitigation and/or the delays associated with this process, the AO will assume responsibility for whatever recordation and stabilization of the exposed materials may be required. Otherwise, the operator will be responsible for mitigation cost. The AO will provide technical and procedural guidelines for the conduct of mitigation. Upon verification from the AO that the required mitigation has been completed, the operator will then be allowed to resume construction. Should fossil resources be discovered at any time during construction, all construction activity in the vicinity of the discovery shall cease until the BLM and an approved paleontologist have time to evaluate the discovery and recover the remains. Work shall not resume in the area of the find without written approval of the AO.

19. All permanent (onsite for six [6] months or longer) structures, facilities and equipment placed onsite shall be low profile and painted Munsell Soil Color Chart Juniper Green or equivalent within six months of installation.

20. Disturbed areas on well pads not needed for production equipment shall be restored as nearly as possible to their original contours and seeded. Cut and fill slopes shall be stabilized with vegetation, matting or equivalent measures to prevent erosion and reduce the color contrast.

21. Implementation of a 60 day timing limitation may be required for well pad J23 199 as determined by the Authorized Officer, as provided by Lease Notice 3, White River Record of Decision and Approved Resource Management Plan, July, 1997:

> Lease Notice 3: This lease parcel encompasses habitat areas in a portion of a wild horse herd management area. In order to protect wild horses within this area, intensive development activities may be delayed for a specified 60 day period within the spring foaling period between March 1 and June 15.

This timing limitation would be implemented at this location only if atypical environmental conditions existed and expected development activities at this location are anticipated to cause undue stress to wild horses within the immediate area as determined by the Authorized Officer.

22. The operator shall prevent use by migratory birds of reserve pits that store or are expected to store fluids which may pose a risk to such birds (e.g., migratory waterfowl, shorebirds, wading birds and raptors) during completion and after completion activities have ceased. Methods may include netting, the use of bird-balls, or other alternative methods that effectively prevent use and that meet BLM approval. It will be the responsibility of the operator to notify the BLM of the method that will be used to prevent use two weeks prior to when completion activities are expected to begin. The BLM approved method will be applied within 24 hours after completion activities have begun. All lethal and non-lethal events that involve migratory birds will be reported to the Petroleum Engineer Technician immediately.

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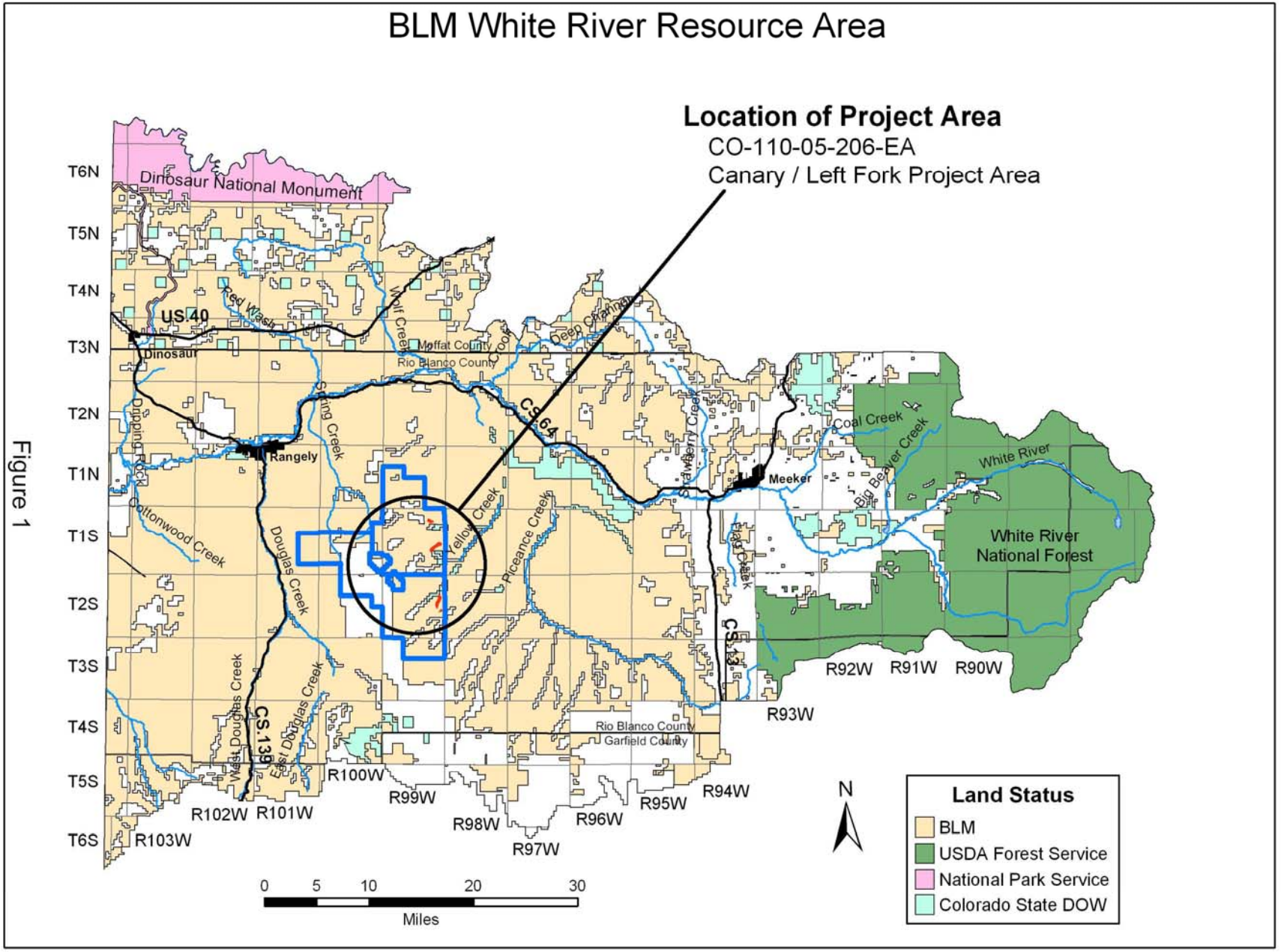
Telephone: (970) 241-7076

NAME OF ENVIRONMENTAL COORDINATOR: Caroline Hollowed

SIGNATURE OF AUTHORIZED OFFICIAL: Kent E. Walter
Field Manager

DATE SIGNED: 10/06/05

ATTACHMENTS: Figure 1-Location Map of the Proposed Action
Figure 2-Map of the Canary/Left Fork Project Area


BLM White River Resource Area
Location of Project Area
CO-110-05-206-EA
Canary / Left Fork Project Area
Dinosaur National Monument
US 40
Dinosaur
Rangely
Meeker
Moffat County
Rio Blanco County
Garfield County
White River National Forest
White River
Coal Creek
Big Beaver Creek
Strawberry Creek
Deep Creek
Cook
Wolf Creek
Red Wash
Spring Creek
Dripping Rock
Cottonwood Creek
Douglas Creek
Yellow Creek
Piceance Creek
Elk Creek
West Douglas Creek
East Douglas Creek
CR 64
CR 13
CR 139
T6N
T5N
T4N
T3N
T2N
T1N
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R98W
R97W
R96W
R95W
R94W
R93W
R92W
R91W
R90W
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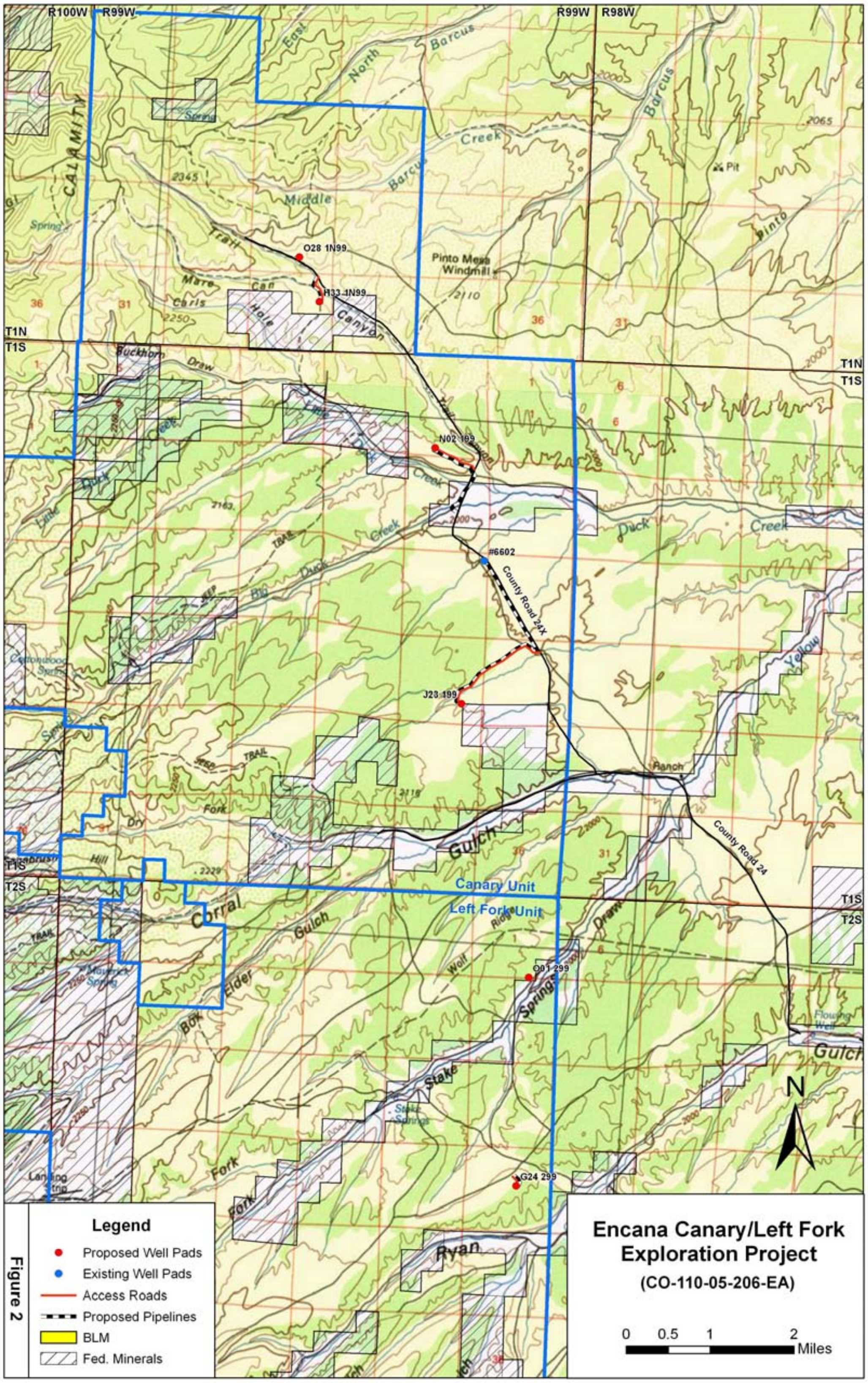
Miles
N
Land Status
BLM
USDA Forest Service
National Park Service
Colorado State DOW

Figure 1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R99W
R99W
R98W
T1N
T1S
T2S
O28 1N99
H33 1N99
N02 199
#6602
J23 199
O01 299
G24 299
County Road 24X
County Road 24
Canary Unit
Left Fork Unit
Legend
Proposed Well Pads
Existing Well Pads
Access Roads
Proposed Pipelines
BLM
Fed. Minerals
Encana Canary/Left Fork
Exploration Project
(CO-110-05-206-EA)
0 0.5 1 2
Miles
N
Figure 2